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MEMORANDUM

Traveling Inspector W. C. Cender

Reply to CG-546

Attn of: M. C. Cruder

202-372-1200

To: Via: Director of Prevention Policy (CG-54)

Chief, Office of Quality Assurance and Traveling Inspectors (CG-546)

STEAMER DELTA QUEEN, O.N. 225875; SPECIAL INSPECTION Subj:

Ref:

(a) 46 USC 3503(b)(1) – Exemption from fire-retardant material construction for vessels

in operation before January 1, 1968, operating only within the Boundary Line

(b) Traveler email of 6/8/07 to CG-546 outlining independent Traveler Evaluation

(c) 46 CFR 78.30-10(b) – Supervised Patrol Routine

(d) Traveler email of 1/23/08 to Rich Softye, copy to D8(dpi), CG-543 and CG-546

1. VESSEL DATA:

Name:	DELTA QUEEN	O.N.	225875
Flag:	U.S.	Service:	Passenger (Sub H – Overnight)
Gross Tons	: 3360	Net Tons:	1160
Length:	240.5 Ft	Built:	1926 – Stockton, CA
Propulsion:	Steam Reciprocating; Cross-	MAWP:	225 PSI @ 450 Degrees F
	Compound Horizontal Sternwheel	H.P.:	2000
Route:	Rivers	Construction: Hull = Riveted Steel (Inner)	
			1991 = Rebuilt Welded (Outer)
			Superstructure = Wood
Owner:	DQ Boat LLC	Operator: N	Iajestic America Line
	1071 Camelback Street		o V. Ships Leisure USA
	Newport Beach, CA 92660		101 Bricknell Avenue, Suite 1500
		N	Aiami, FL 33131

2. BACKGROUND: The Steamer DELTA QUEEN is a steel hulled, wood superstructure "night boat" inspected under Subchapter H with overnight accommodations for 174 passengers. The vessel is one of two built by the California Transportation Company in Stockton, CA originally designed to provide overnight service, on reciprocal courses between Sacramento and San Francisco, CA. See enclosure 1. The DELTA QUEEN was leased to the U.S. Navy during WWII for use as a floating barracks, training facility and troop ferry. In 1946, the vessel was sold to the Greene Line Steamers of Cincinnati, OH, and towed to New Orleans via the Panama Canal. The vessel subsequently underwent extensive renovation in Pittsburgh, PA and began service as a Western Rivers Steamer in 1948. The vessel was listed on the National Register of Historic Places in 1970 and declared a National Historic Landmark in 1989. The DELTA QUEEN is the

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only "night boat" of its type left operating in the U.S. and carrying over 50 passengers overnight due to a Legislative Exemption per reference (a) since 1968 and consistently extended to date. The current exemption expires October 31, 2008. With respect to the exemption and noting that the Coast Guard has consistently opposed legislation to prolong the service life of the DELTA QUEEN, the undersigned suggested an independent evaluation in reference (b) to update Coast Guard records with real time, current information on the condition of the vessel, its operation and any liabilities beyond compliance with applicable existing regulations for the vessel's farewell season of operation. A second purpose was to be prepared should the political will materialize to grant further extension and the Coast Guard be approached for recommendations.

The strategy of the independent evaluation was to access the vessel's history since the last extension of 1998 including review of: 1) the last Traveler's Report of record (1993) to see if concerns continue to be current; 2) Reportable Marine Casualties to see if there are any overt operating trends indicating the vessel is a higher risk than its peers exclusive of and or because of its combustible construction or technology; 3) the renovation history since 1998 to see if non-passenger spaces continue to be upgraded and whether fire load is increasing, decreasing or status quo; and 4) how the vessel complied with Subchapter W in 2001 for increased primary lifesaving including any safety assessments, risk analyses and or evacuation drills conducted. Visits to the vessel in annual lay up and then underway would also be conducted to access condition, operational reliability, crew competency and organizational norms.

This report constitutes the third and final visit by the undersigned and focuses on the underway evaluation. Previous visits during lay-up and issues found/addressed are described in enclosures 2 and 3. Additional photographic documentation is available to Coast Guard personnel on the CG-546 Headquarters Shared Folders at Y:\CG-5\CG-54\CG-546\Travelers\Delta Queen; \Delta Queen Steam Follow-up and \Delta Queen Underway.

3. <u>UNDERWAY STRATEGY</u>: Joined vessel moored to the public landing at Cincinnati, OH on 5/15/08 for the second five days of a ten day cruise whose final destination was Nashville, TN on 5/20/08. The purpose of this visit was to evaluate the vessel's operational condition, assess the crew competency and watchstanding organization as well as understand the nature of the passenger experience on board. To do that, I stood one day and one night 6 hour watch in the Wheelhouse, Engine Room and Fire Room, which allowed me to witness day and night navigation above and below deck as well as locking and landing (mooring) evolutions. Additionally, I spent 4 hours making nightly rounds with the required supervised patrolman. Over the five days aboard, between time on and off watch I interviewed all licensed personnel as well as a sampling of unlicensed personnel. Living the passenger experience also gave me access to the wait and hospitality staffs as well as a diversity of passengers during breakfast and lunch

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when seating was open. Recognizable organizational clothing with a Coast Guard logo, made it easy to get solicited as well as unsolicited opinions about the vessel and its continued operation.

- 4. <u>INSPECTION NARRATIVE</u>: Met individually with the Master, Captain Paul Thoeny and Chief Engineers Fred Rich (first half of trip) and Tommy Thornhill (second half of trip) to discuss the purpose of my visit. Both Captain Thoeny and Chief Thornhill were aboard during my last visit at lay-up. Mr. Kelly Gordon of V-Ships, the managing agent was now the primary contact representing operators Majestic America Line (MAL) and was aboard for the duration of my visit. Previous representatives Chris Volkle (MAL) and Greg Sinn (V-Ships) noted in enclosures 2 and 3 are no longer employed by their respective companies. Highlights:
- a. *Passenger Experience:* This was as indicated in brochures and marketing. There was appropriate security protocol upon boarding and subsequent escort by the Mate of the Watch. My cabin on the Texas Deck, like most, was accessed from the open deck only. The accommodation itself was adequate in size and efficient in its limited but effective space utilization. The presentation was clean and neat. See enclosure 4. All doors, windows, screens, handrails, lighting, shower and toilet were sanitary and in proper working order. The cabin was equipped with fixed fire detection, multiple sprinkler heads and air conditioning, all obvious by their fittings and appearance. Emergency instructions were posted and obvious, including a specific statement that the vessel was NOT in compliance with the "Safety at Sea Convention" due to its wood construction. Life jackets were in plain view, clean, labeled and in good condition. There was also posted information limiting smoking to the open deck in way of proper receptacles.* All passenger accessible spaces were painted out and or properly finished with brightwork.

*Note: Passengers were largely retirement age and few if any smoked. Those in the crew that smoked did so in a designated area on the main deck forward and off limits to passengers.

b. *Manning:* OCMIs follow published guidelines but very rarely know or understand how that manning is utilized aboard the vessel. Additionally, vessels like the DELTA QUEEN are from another era of technology and transportation, unique in their operation with indigenous or historical manning precedents grown over time that may be lost or not fully understood compared to modern vessels and what may be the norm in current manning standards. The following serves to document manning on the DELTA QUEEN and provide feedback to the Marine Safety Program, both locally and at the Headquarters Level.

The marine crew complement was within the sample manning scales published in COMDTINST M16000.8A (Marine Safety Manual Volume III – Marine Industry Personnel). Some of the positions in the sample manning scales may vary at the discretion of the OCMI. In this case, the

minimum manning per the Certificate of Inspection was as follows:

(1) Master	(1) Chief Engineer		
(3) Licensed Mates/OINCNW	(2) Licensed Engineers		
(2) Patrolman	(2) Oilers		
(8) Deckhands	(2) Fireman/Watertenders		

There was actually more marine crew aboard than the above minimum. In the Engine department, the Licensed Engineers, Oilers and Firemen all stood 12 on and 12 off, with the Chief Engineer at the operating platform during locking and docking or landing. This met the minimum manning dictated by the COI and comported with the Watch Quarter and Station Bill, which also indicated an additional (2) unlicensed Junior Engineers and (1) unlicensed Maintenance Person. There was actually only (1) unlicensed Junior Engineer on this trip

For the licensed navigation watch, (2) Licensed Officers acted as Officers in Charge of the Navigation Watch (OICNW) standing 6 on and 6 off, as did (2) other Licensed Officers who were also river pilots and physically at the wheel (sticks). The Master, similar to the Chief Engineer was not a watchstander, but in the wheelhouse as necessary and for all locking and docking or landing. This met the minimum manning on the COI including the requirement for two Licensed Officers on each watch. An extra Licensed Officer, a new hire, was also aboard this trip for training and familiarization.

The utilization of the unlicensed deck crew was not as intuitive. The deckhands were split with (4) standing 12 on and 12 off from 0600 to 1800 daily and only (2) standing 12 on and 12 off from 1800 to 0600. The uneven split was considered best utilization of personnel because of the higher level of passenger activity during the day and lower level at night. The seventh deckhand was the Carpenter, who was actually a 12 hour dayworker with the Maintenance Person from the Engine department as his assistant. While management of the crew is the province of the Master, the seeming lack of an eighth deckhand did not cross well to the published Watch Quarter and Station Bill. The Master indicated that while he did not feel the vessel was undermanned for routine underway operations with (6) deckhands and a dayworking Carpenter who filled a billet on the Watch Quarter and Station Bill, he did feel strongly that he needed all 8 unlicensed personnel for emergencies.*

*Note: Concur with Master's comment. It was clear MAL was driving to further minimize manning and at the time in dialog with the Sector New Orleans about combining deckhands and patrolman. The undersigned discussed this with the Sector Chief of Inspection just prior to joining the vessel advising that per 46 CFR 78.30-10(g), patrolman shall have no other

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duties and recommended they not be combined, particularly on a vessel of this construction and technology. This was reiterated onboard. Sector New Orleans has response for action.

The explanation on board was that due to a shortage of crew accommodations, the company directed that the new hire licensed mate fill the additional position on the Watch Quarter and Station Bill. While logical from the company's standpoint, perhaps not the functionality intended by the minimums dictated by the OCMI, nor approved by the OCMI. It was suggested that a deckhand be supplied as soon as practicable* and that if further flexibility or refining of minimum manning is necessary, that the issue be taken up with OCMI New Orleans.

*Note: The eighth unlicensed deckhand reported aboard at the end of this trip.

- c. Watchstanding: The following observations were made:
- 1. <u>Deck Wheelhouse</u>: During watches stood, bridge team protocol and procedures were observed. Witnessed day and night operations including negotiation of bridges, multiple locking and landing evolutions. All but one of the licensed watchstanders were experienced river men. Most, including the Captain had years of experience specifically on the DELTA QUEEN. This was evident by observation. Integration of Pilot, Mate (OICNW) and the Master was smooth and organized throughout and under all conditions. The managing agent (V-ships) was in the early stages of implementing a voluntary Safety Management System (SMS) aboard the vessel. Sighted Interim Voluntary Safety Management Certificate issued by ABS 4/14/08. Company goal for full Safety Management Certificate (SMC) is 8/14/08. Reviewed manuals in wheelhouse for a program overview. Sighted Streamlined Inspection Program embedded in SMS preventive maintenance chapter. Operations manual was company generic and met minimum content requirements, but considering the technology of the vessel, should be DELTA QUEEN specific. Witnessed use of SMS Checklists for various bridge team evolutions and found all satisfactory.
- 2. <u>Deck Patrolman</u>: This manning requirement is specific to Subchapter H passenger vessels and more specifically vessels "having berthed or stateroom accommodations for passengers." Additionally the patrolman is separate from and in addition to the minimum number of deckhands specified and by regulation "shall have no other tasks assigned to him." Reference (c) specifies that "between the hours of 10 p.m. and 6 a.m., a supervised patrol shall be maintained so as to completely cover all parts of the vessel accessible to passengers." On the DELTA QUEEN, there are (2) patrolman on a 12 hour watch from 1800 to 0600 daily, which more than covers the minimum required supervised patrol time. The patrolmen alternate duties every hour, but make a complete round of the vessel in less than 20 minutes, starting and finishing at the wheelhouse, completing 3 rounds an hour. There are (23) stations throughout the vessel including not only passenger but crew berthing areas. The stations are updated from mechanical key stations to electronic stations. The patrolman swipes a wand at each station in the

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approved and numbered order. The process is recorded electronically by downloading the wand daily to a system hard drive. Management reviews these records and can verify if the patrolman is following the proper and ordered path as well as whether stations have been tampered with.

This unique manning requirement clearly serves as a major risk mitigator considering the vessel's combustible construction and allows early/prompt action in the event fire is detected. With a live watch walking thru the vessel every 20 minutes, the patrolman also serves as a very effective disciplinary tool and additional check of off-watch crew activities both in and outside berthing areas*. Empty spaces and storage areas are visually checked as are crew common areas. The alternate hour regime of walking the patrol route then standing bridge lookout was observed to keep boredom and complacency in the execution of duties down and worked well. Both patrolman had a long history of employment aboard the vessel in this capacity, understood the critical nature of their job, took it seriously and conducted themselves very professionally. There was no hesitation to check all areas within and along the route as well as politely but firmly make corrections to passenger or crew actions, such as clearing temporary obstructions or ensuring crew members closed watertight doors after passing though. Because the patrol begins and ends in the wheelhouse, all discrepancies are reported to the OICNW after each round.

- * Note: As observed, there was a marked reduction in activity around the vessel after the nightly entertainment was over at about 2230. The last patron at the bar in the Texas Lounge usually retired about 0100 and by the 0200 round, the vessel was settled down to virtually zero passenger activity. This left little more than 2 hours calm before galley staff would be up and activity around the vessel increased again.
- 3. Engineering: Similar to the above, observed day time and night watches both in the engine and fire rooms. Made rounds with oilers and observed the firemen. The main propulsion as well as the auxiliary plant ran largely without incident, despite all the locking and landing evolutions that are a routine part of river operations. The only event of any note was one instance of low vacuum that was rectified at the next scheduled landing by opening the condenser and punching tubes clogged with sea grass. The sea strainer on the DELTA QUEEN is a primitive affair consisting of two pieces of quarter inch stainless steel plate with holes in it, loosely fitted into a track that allows it to be raised and cleaned. While apparently adequate for its service, it is not as efficient as a cylindrical marine duplex strainer with baskets. Nonetheless, there is cost benefit to this simplicity as the engine staff unclogged the main condenser in short order and vacuum was regained.

With respect to crew competency, unlike the licensed officers on deck, those in the engine department, except for Chiefs Rich and Thornhill, were relatively inexperienced. Neither Chief Engineer had long term experience specific to the DELTA QUEEN, although Chief Thornhill, a long time company employee, was an experienced steam sternwheeler engineer with most of his career as Chief on the now laid-up MISSISSIPPI QUEEN. While functional, the low level of experience also extended to the unlicensed members of the engine department. As evidenced

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during lay-up, it continued to be clear that the engine department had high turn-over, making it difficult to establish the similar level of professional continuity witnessed in the wheelhouse. This is particularly problematic because of the difficulty of locating steam engineers and or others experienced with the technology aboard the DELTA QUEEN.

While the manning compliment met the minimum specified on the COI, it is only adequate to operate the plant and does not account for the continued maintenance over and above daily operations required on a steam plant of this age. Specifically, those on watch are fully engaged with operating the plant and cannot engage in any other maintenance activity, unless of course some failure or malfunction occurs that requires those aboard to turn to outside their watches, such as at port calls. Even routine housekeeping of engineering spaces is difficult to non-existent because there is simply no extra crew in the engine department. Preventive maintenance, and or proactive restoration/renovation/cosmetic upkeep is simply not part of the seasonal underway routine. As a result, the machinery spaces give the appearance of working spaces that do not get the additional care consistent with the restored physical condition of the rest of the vessel.

There is no evidence of an institutionalized annual lay-up plan that runs maintenance and major repairs out into the future, or additional manning with the needed expertise to not only conduct routine or preventive maintenance, much less get ahead of conditions aboard the vessel. There is also no evidence of scheduled maintenance periods at suitable locations up and down the river system during or between scheduled stops. The only strategy evident in the engine department is cost cutting and minimizing with no overt planning*. This will negatively impact vessel reliability and safety over time. As a result, the topside looks good, but the engine department is just getting by.

*Note: This comment is based on interviews with onboard crew, both licensed and unlicensed, experienced and not. While outside the specific scope of minimum regulations, it is not outside the scope of good marine practice for a vessel of aged technology being "risk managed" in modern times. This observation is indicative of a problematic situation that may certainly have a perceived if not real impact on the current and future safety of this high-visibility vessel.

d. *Fire and Boat Drill:* A crew-only drill was held on 5/17/08. This is the normal protocol for the intermediate drill on a two week cruise. Logs indicated that the same drill with passenger participation took place the previous week at the start of this cruise. Took station in the wheelhouse, then toured the vessel with the First Mate. Found all marine crew and hotel staff mustered at various locations with both Emergency Squads assembled in a timely manner. All gear was in good condition and at the ready. The first mate stopped at each muster station and questioned those assembled as to their assigned tasks. All those questioned were aware of their duties and answered promptly. Witnessed adequate fire main pressure at a random deck station high and forward. Secured fire drill and held boat drill. Accompanied First Mate to rescue boat. Found rescue boat manned and ready, with all gear in place and in satisfactory condition. As the

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vessel was underway, the rescue boat was not lowered. Drill satisfactory.

- e. *Unintended Fireloads:* While the performance of the machinery and assigned engine personnel were up to the task and the vessel met minimum regulatory requirements to be issued her annual COI, there continued to be evidence of a lack of both short and long term maintenance that adversely impacts the safety of the vessel and can be better managed. All have to do with unintended or excess but unnecessary fireload. These include:
- 1. Soot accumulation in the fire room: With the vessel only steaming for a month, there was an obvious excess accumulation of soot over recently painted parts of the boilers. The fire room watch indicated the cause was casing leaks when blowing tubes. Accompanied by Mr. Gordon (V-Ships), we proceeded to the fire room that evening to find the fireman dressed out in Tyvek's coveralls and a dust mask. The soot blowing arrangement is primitive. It is stationary and uses existing hollow staybolts that are then drilled in all directions at the firebox end. Leakage where the staybolt exits the plate waterwall tube headers is where the leakage occurs, further exacerbated by boiler doors that are warped, ungasketed and do not fit any more. The result during routine soot blowing was the introduction of clouds of soot into the fire room settling everywhere, instead of up and out the stack. The aft boiler is leaking the worst and the primary source of soot. See enclosure 5.

Note: This constitutes an unnecessary and unacceptable accumulation of combustible fire load. This has probably been this way a long time, but is an issue that needs a focused plan, attention at lay-up and can be managed. Since identified and before repairs can be made, the vessel has instituted boiler washdown after blowing tubes to keep the accumulation in check.

2. Oily residue in Generator Enclosures: Considering a fire tripped the C02 system on this enclosure at the end of lay-up while testing engine safety shutdowns and there is an extensive narrative written during lay-up about cleanliness in the generator enclosures, a closer look was in order. The source was crankcase vents exhausting engine blowby uncontrolled into the space. See enclosure 6.

Note: This is another unnecessary/unacceptable accumulation of combustible fire load that can be managed. Since identification, a CG-835 was issued during the first quarterly inspection in Cincinnati on 6/19/08 and filter separators have been ordered.

3. Generator Enclosures not Fume-tight: The above is further exacerbated by finding penetrations in the CO2 protected enclosure not fume tight (missing) in way of the engine exhaust piping and generator end electrical cables. There was also evidence that insulation installed to the wood underdeck of the fire room was not replaced over the enclosure after the generator end was rebuilt incident to the CO2 tripping event. See enclosures 7 and 8. Note: Since this was identified, the Chief Engineer is taking steps to close openings and reinstall insulation. CO2 calculations were verified as being 150% of required, so no CG-835 was issued during the subsequent quarterly inspection.

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4. Oil in the bilges: While there is a 15 ppm oily water separator for the aft machinery spaces, there is no proactive procedure to pump different bilges on a set schedule. Most oil accumulation was found to just be a surface skim, but it is not being managed. The aft center rake has no appreciable oil source except the main engines, yet accumulation is there, instead of being cleaned up. In other spaces, the effort has to be more overt. The bow thruster prime mover leaks (Detroit) and needs to be attended to on a regular basis.

Note: This situation in total constitutes more unnecessary/unacceptable accumulation of combustible fire load that can be managed. There is simply no pro-active plan.

f. Preventive Maintenance

- 1. Deck: The fit, finish and maintenance of the topside and public spaces was found to be consistent with maintaining the vessel's status as a national historic landmark and promoting a unique passenger/consumer product. In the opinion of the undersigned, a major reason for the conditions found is the company's decision to employ a full time skilled carpenter as a daily 12 hour dayworker. This is another area somewhat outside the scope of minimum regulatory requirements, but important to the continuous upkeep of a wood vessel. As part of crew interviews, toured the vessel in its entirety with the carpenter to get his perspective. The wood superstructure combined with the passenger vessel arrangement would be a maintenance nightmare without someone devoted full time to its upkeep. Inherent in this upkeep and directly contributing to passenger and crew safety are ensuring the wood and things fastened to that wood are not deteriorated and firmly anchored. Small but important items that come to mind are hand rails, grab rails, chairs, tables, banisters and staircases as well as the proper operation, alignment and adjustment of doors, windows and associated latches. During the trip, it was a regular occurrence to see the carpenter all over the vessel attending to repairs or making them before they became larger and more complex issues. The carpenter, like much of the crew, was passionate about his job and keeping the DELTA QUEEN in the best condition he could structurally and cosmetically. Topsides were properly prepared and painted out with modern high gloss polyurethane. Decks were treated with non-skid and the brightwork both inside and out showed the depth of preparation and maintenance in its obvious luster and final appearance. See enclosure 9. Long term maintenance and repair of the wood structure should be included in the annual lay-up plan. Not of immediate concern, but repairs over time will be needed to steel vertical columns where they pass through wood cap rails on each deck. Varying degrees of corrosion and or deterioration are taking place to these structural members.
- 2. Engineering: In addition to items in paragraph 4(e) above, the following were noted: a. oil in the condensate: There is a dedicated lubricator injecting oil just ahead of the throttle valve, but this is cylinder oil, not black oil, so the source of black oil is still not certain and may contribute to premature tube replacement due to ineffective heat transfer. Although there is a chronic history of this oil in the condensate and boiler as evidenced by a 1987 report

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found onboard, it is simply not good boiler operating practice and an effort should be made to mitigate or proactively manage this problem. See enclosure 10. As previously noted, annual chemical cleaning was part of routine maintenance but not conducted due to budgetary constraints this past lay-up.

b. boiler repairs: Coast Guard records over the last 10 years indicate tube renewals and or repairs in 1999 (floor tube renewal), 2000 (seal weld to lower screen tubes and 40 other tubes renewed), 2002 (screen tube renewal), 2006 (random single tube failure) and 2007 (waterwall failure due to overpressure hydro). Repairs to brick work and refractory appear to be part of annual maintenance. With the exception of seal welding the lower screen tubes and the overpressure to the waterwall, repairs do not seem excessive considering the steaming time per season. While it is suspected there are more tube repairs than the record shows, there is no indication of tube failure during the operating season with passengers aboard.

c. 10 year mountings removed, studs examined: As previously discussed in enclosure 2, the primary connections under boiler pressure or mountings are inspected at 5 and 10 year intervals. The 5 year "mountings open" inspection was completed at lay-up this year, because there was no record either with the Coast Guard or with the DELTA QUEEN that the inspection was conducted in 2004, when it was due. This inspection is primarily a valve inspection of the first valve holding boiler pressure and involves removing bonnets and inspecting the condition of the valve seating area, valve integrity and ease of operation. The 10 year "mountings removed, studs examined" inspection is due February 2009 and involves removing the valves, then inspecting the primary connection to the boiler. In modern construction, that spool piece is welded, so the integrity of the spool piece and associated welding is inspected and the studs on the first bolted flange are removed and examined. The DELTA OUEEN's mountings pre-date welded construction. There is no spool piece. A riveted collar takes up the shape of the steam drum and provides a flat surface for valves to be attached by studs. The riveted collar is specifically drilled and tapped for those studs and the specific valve flange, all holding boiler pressure. There is no evidence that these studs have ever been removed from the boiler for complete examination or renewed. Considering the age of the installation, the valves and associated studs will be removed at the next lay-up to satisfy this inspection requirement. Valves look to be on raised faces and should come out easily. The studs may be more challenging, break instead of come out, and require drilling and chasing of the existing holes. Studs are a specific grade tied to the temperature and pressure of their service and marked. Even if successfully extracted, they are usually replaced at this interval.

d. *future considerations/evaluations*: These revolve around closer scrutiny of the existing/original boiler and main steam piping including a more detailed review of repairs and tube failures over the last 10 years; Ultrasound thickness gauging of tubes (baseline); Micrometer measurement of waterside staybolts (baseline); Random X-ray of main steam line including bends; improved physical access to main steam line for visual inspection throughout

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and while witnessing regular hydrostatic tests; CG witnessed hydro to bunker tank steam coils; and improved condensate filtration.

5. OTHER:

- a. Operation beyond legislative exemption: CG-546 was approached in early January 2008 by CAPT Rich Softye, USCG (Ret.) of BMT Designers and Planners in Seattle, WA (then consultant for MAL) to discuss operation of the DELTA QUEEN beyond the legislative exemption expiration due to overbooking by the company. Reference (d) documents phone discussion between CG-546 and D8(dp) with agreement that D8(dp) would respond to a request from MAL in writing and that CG-546 would act as consult to D8 staff. There is currently a detailed proposal from V-ships as the managing agent for MAL opening a dialog on how they would modify the vessel and its operations for a combination of limited overnight passengers (49), with the balance (125) being day excursion passengers, while retaining their current allowed passenger count of 174 total. See enclosure 11. The proposal is consistent with what the law and regulations will allow without an exemption and with language used consistently by CG-543 in numerous responses over the past year to elected officials noting that the withdrawal of the vessel's current exemption "would not preclude her from continuing in excursion, sightseeing or charter trade so long as she meets the applicable Coast Guard regulations, thus maintaining her historic value." Consensus on the final acceptable vessel arrangement, passenger count and or operational restrictions pends from D8(dp).
- b. *Annual Certification*: As indicated in enclosures 2 and 3, the last lay-up period was characterized by poor organization and continued lack of planning and communication with Sector New Orleans, the vessel's certificating OCMI. A narrative summary by Sector New Orleans attached to MISLE Activity 3118551 and part of the public record gives a sense of the tedious nature of the inspection as well as the frustration of the local marine inspector. With the change of personnel since lay-up and the proactive attitude of the current V-ships representative, there is a high level of confidence that recommendations in this report will be considered and followed through to improve the overall annual inspection process.
- 6. <u>CONCLUSIONS</u>: Items (a) thru (e) below relate directly to specific points in the independent evaluation inspection strategy described in paragraph 2, followed by additional pertinent conclusions. Based on the above, it is concluded that:
- a. Issues outlined in previous traveler's reports of the early 1990's were shared with MAL, who largely addressed them via an internal audit of June 2007. Housekeeping items associated with extraneous and unnecessary fire accelerants such as lint build-up in the laundry room, oil in

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machinery space bilges and soot accumulation in the fireroom linger but have been identified, require continued vigilance, and are being better managed than in the past.

- b. There have been <u>no</u> significant reportable marine casualties since 1998 that have directly endangered passengers. Over this ten year period, two fires were reported. Both occurred dockside, in non-passenger spaces and were extinguished quickly; one in the crew laundry with a portable extinguisher after a smoke alarm went off in the wheelhouse and the other automatically in a CO2 protected generator enclosure. Beyond fire, there have been four incidents related to varying degrees of rudder casualties, which in most cases were able to be repaired temporarily after being inspected by the Coast Guard due to the level of inherent redundancy. The vessel has rudders ahead and astern of the paddlewheel as well both a bow and stern thruster. There were also two incidents of loss of propulsion (with different causes) necessitating towboat assist, but handled expeditiously and safely. Problems found were corrected quickly and the vessel allowed to continue operations. There were two minor incidents of hull damage above the waterline and two personnel injuries. There are no fatalities on record over the last 10 years.
- c. The spirit of the exemption language with respect to non-public spaces has <u>not</u> been applied with any consistency or indication of recency. Renovations, modifications and or upgrades since the last exemption of 1998 and as described in enclosure 2 were found to be limited to those associated with the installed sprinkler system only. Based on a review of Coast Guard records in the vessel's lay-up and certification port of New Orleans, there is no evidence of further modifications or structural fire protection upgrades since 1998 with most activity tapering off after 9/11/2001. Some existing non-public spaces, like the carpenter's shop have been improved by cleaning and organizing, which helps reduce fire load. Other non-public spaces, such as the laundry room still only show bare wood structure with no fire-rated insulation or finish. Still others, such as storerooms are finished with varying degrees of stainless steel similar to the galley, but as indicated, the installations are not consistent throughout with fire rating unknown.
- d. Compliance with Subchapter W was accomplished in 2001 by installation of additional liferafts and inflatable slides. There is no evidence in the record of any safety assessments, risk analyses, an evacuation plan and or evacuation drills conducted.*

*Note: While the addition of primary lifesaving and evacuation slides was an acceptable compliance solution, there is no indication the newly installed equipment was demonstrated or exercised. Vessels like the BELLE OF LOUSIVILLE and the BELLE OF CINCINNATTI both on the Ohio River, used the Safety Assessment methodology in Navigation and Inspection Circular 3-01 to document and focus their risk of evacuation as well as demonstrate their evacuation contingency capability.

- e. based upon direct observation of the vessel and crew underway that the physical condition, operational reliability and crew competency meets or exceeds minimum regulatory standards.
- f. the licensed manning compliment beyond the minimum required by the Certificate of Inspection, specifically with respect to the non-watchstanding Master and Chief Engineer is appropriate for this vessel type and service since it allows these senior personnel to be in a continuous roaming and oversight mode as necessary to maintain safe operations.
- g. even though routine underway operations are adequate with (6) unlicensed deckhands, the two additional deckhands required are the minimum necessary to properly execute the Watch Quarter and Station Bill for emergencies and passenger control;
- h. the supervised patrol procedures in place aboard the DELTA QUEEN, including the number of patrolmen, recording stations, approved path and thoroughness of the round more than meet minimum regulatory requirements;
- i. the vessel has initiated a voluntary SMS using independent Classification Society verification and is well on the way to obtaining a permanent SMC;
- j. there is insufficient engine department manning to keep up with or do maintenance underway;
- k. there is no evidence of any short or long term organized plan for annual vessel lay-up periods to compensate for maintenance and or large repairs that cannot be done underway because of minimal engine department manning only sufficient to operate the vessel;
- l. there is high turn-over, low experience and no dedicated or institutionalized training specific to the DELTA QUEEN for engineering watchstanders that recognizes the unique technology and maintenance needs of the vessel;
- m. the wood superstructure, both structurally and cosmetically appeared to be in above average condition for a vessel of this age and service;
- n. use of a dedicated dayworking carpenter during the operating season and allows for the continuous maintenance and proper repair of the wood superstructure, related components and hardware that directly contributes to passenger safety on a daily basis and allows the vessel to retain its current state of cosmetic and structural preservation;

- o. the steam propulsion system, despite its age has a record of consistent reliability with only two reported "loss of propulsion" casualties in the last 10 years requiring towboat assistance and no evidence of boiler failures or emergency repairs while operating with passengers aboard; and
- p. changes in company management personnel have positively impacted V-Ships' ability to more proactively manage the vessel since lay-up including timely correction of conditions found and better future planning as evidenced by the current operational proposal submitted to D8 (dp) well ahead of the expiration of the current legislative exemption.

7. <u>RECOMMENDATIONS</u>: Based on the above conclusions, it is recommended that:

- a. V-Ships on behalf of the Owners/Operators:
 - 1. complete implementation of the voluntary SMS with ABS;
- 2. revise the company generic ops manual currently part of the voluntary SMS to better reflect the vessel specific unique technology and operations of the DELTA QUEEN;
- 3. give due consideration to a detailed schedule and timeline for maintenance items, both short and long term discussed in paragraph 4 to be accomplished at the next and subsequent annual lay-up periods to compensate for maintenance that cannot be accomplished underway;
- 4. interact with Sector New Orleans prior to and early in the lay-up period so that Coast Guard resources can be effectively scheduled to meet the vessel's needs with respect to the timely inspection of ongoing repairs and the details of the annual certification process;
- 5. give greater attention to providing the same consistency in hiring and retaining licensed and unlicensed members of the engine department as is currently evident in the deck department and particularly in the wheelhouse;
- 6. consider a focused effort to retain engine department personnel that know the plant, intend to stay with the company long term and can work to move the maintenance and increased efficiency agenda forward, not just seasonally operate the existing plant.

b. D8 (dp):

1. Work with applicable Headquarters offices via CG-546 and to solution with V-Ships on behalf of MAL with respect to the current proposal for a combination of limited overnight and day passenger operations beyond 10/31/08 without the current legislative exemption.

c. Sector New Orleans:

- 1. not entertain any further reduction of the current manning on the COI, particularly with respect to the number of unlicensed deckhands, currently at eight to adequately meet the needs of the Watch Quarter and Station Bill;
 - 2. maintain two patrolmen based on the number of stations and the approved supervised

route, keeping them separate and in addition to the eight required unlicensed deckhands; and

- 3. Keep CG-546 advised as needed for issues specific to this high profile vessel, including plans for the next lay-up period and specifically the 10 year mountings removed, studs examined inspection due 2/09, so that a Traveler may attend.
 - c. Office of Quality Assurance and Traveling Inspectors (CG-546):
- 1. continue to be a ready resource and or consult on DELTA QUEEN vessel specific issues as needed with respect to current and future operations with or without legislative exemption.

#

Encl: (1) Photos - DELTA QUEEN Moored Paducah, KY

- (2) CG-546 email of 3/12/08 DELTA QUEEN Initial Travelers Visit (3) CG-546 email of 3/28/08 DELTA QUEEN Main Steam Follow-up
- (4) Photos Typical Passenger Cabin Accommodation
- (5) Photos Soot Blowing and Condition of Boiler Casing Doors
- (6) Photos Crankcase Vents Spewing Blowby into Generator Enclosures
- (7) Photos Generator Enclosures not Fume-tight
- (8) Photos Insulation Missing in Wood Underdeck over Generator Enclosure
- (9) Photos Wood Topsides
- (10) Photos Oil in Condensate at the Hot Well
- (11) V-ships Operations Proposal without Legislative Exemption dated 6/23/08

Copy: CG-543, CG-521, CG LANTAREA(Ap), CCCGD8 (dp), Sector New Orleans, Marine Safety Center, TRACEN Yorktown (t-mii); V-Ships Leisure USA; Majestic America Line



Steamer DELTA QUEEN – Moored Paducha, KY - 5/2008



----Original Message----

From: Cruder, Marc

Sent: Wednesday, March 12, 2008 1:26 PM

To: Watson, James RDML; Sturm, Francis CAPT; Cameron, Keith CAPT; Karr, Michael CAPT; Branham, Bruce CAPT; Close, Timothy CAPT; Hooper, Thomas CAPT; Peter, Brian CDR; Christensen, Eric CDR

Cc: Stroh, Lincoln CAPT; Lincoln, Brian CDR; Sutton, Steve LCDR; Alho,

Subject: DELTA QUEEN INITIAL TRAVELERS VISIT

All: Travelers Cruder/CDR Christensen attended DELTA QUEEN in lay-up 3/6/08, New Orleans. See photos at W:\CG-5\CG-54\CG-546\Travelers\Delta Queen

Conducted condition survey(part 1 of 2)incident to farewell season of ops as overnight passenger vessel with a combustible superstructure due to current lack of political support to issue another legislative exemption. Current Exemption issued 1998 expires 310CT08. Report to follow. Highlights:

- Met with representatives from Majestic American Lines (MAL), V-Ships, Designers & Planners and Ship's crew including Master and Chief Engineer
- Inspected void spaces as a result of double hull installed in 1990
- Walked thru the vessel focused on condition of non-passenger spaces which we have control of via the legislative exemption and then passenger spaces

Conclusions:

- 1. Modifications to hull in 1990 have proved themselves and are holding up;
- 2. There is evidence of reduction to fire load and/or mods to original construction in non-passenger spaces and superstructure since 1998;
- 3. The bulk of that effort surrounds upgrades to the onboard sprinkler system from 1998-2001 reviewed and approved by MSC. Continued and consistent efforts taper off after 2000/2001 lay-up and/or are not documented/obvious;
- 4. Passenger spaces are well kept and maintained. Crew spaces have been renovated to remove combustibles and are spartan with minimal fire load;
- 5. Non-passenger spaces including fireroom and engineroom look like those of an aged, working commercial vessel and are not in show condition like the rest of the vessel;
- 6. Housekeeping in these spaces is near impossible to improve without extra shore crew at lay-up or riding crew and a focused plan, neither of which exist right now;
- 7. There is no previous or current evidence of a focused long term maintenance plan year to year for lay-up periods (4 months annually and always in New Orleans). Historically, this company's vessels are laid up in December, minimum to no crew is kept on the vessels until one month from sailing. CG inspections are not coordinated until published sailing schedule forces things to happen. The local office has repeatedly reached out to the company with no meaningful response. The CID sends an MI periodically just so they don't miss anything. Management present were receptive to this and inferred that with V-ships as the new managing agent, this will change.

Overall, vessel was in better condition than expected. Efforts have and are being made to monitor unnecessary fire load, so SFP is the known risk. Areas of improvement include better planning, relations and maintenance to get non-passenger spaces where they could be for everyone to be comfortable. If forced to keep this vessel operating as an overnight boat, we need to force a commitment to more structure in our relationship and the vessel's maintenance way forward. MAL is talking SMS, but has not implemented it yet.

The unknown risk is the age/fatigue of the watertube boilers, both older than the vessel (1919 vs. 1926) w/partially riveted construction. Metallurgy analysis and or x-ray may be appropriate now or at the end of the season if vessel keeps running. I am following up with Sector New Orleans on some boiler/machinery details which could lead to another visit before steaming. I also plan a visit underway to gauge crew competency and ops (part 2).

Marc Cruder Traveling Senior Marine Inspector

From: Cruder, Marc

Sent: Friday, March 28, 2008 9:16 AM

To: Watson, James RDML; Sturm, Francis CAPT; Cameron, Keith CAPT; Karr, Michael CAPT; Branham, Bruce CAPT; Close, Timothy CAPT; Hooper, Thomas CAPT;

Peter, Brian CDR; Christensen, Eric CDR; Little, Patrick CAPT

Cc: Stroh, Lincoln CAPT; Lincoln, Brian CDR; Sutton, Steve LCDR; Alho,

Thomas MSS4

Subject: RE: DELTA QUEEN MAIN STEAM FOLLOW-UP

Ref (a): DELTA QUEEN INITIAL TRAVELERS VISIT Email of 3/12/08

All: Conducted follow-up visit from 3/17 thru 3/21/08 focused on boilers, mountings & main steam line after review of CG inspection records. See photos at W:\CG-5\CG-54\CG-546\Travelers\Delta Queen Steam Plant

Met with V-ships and crew including Master/Chief Engineer. Highlights:

1. Boiler MAWP:

- Boilers are the same type from different manufacturers and NOT marked with MAWP. One has a post manufacture stamp of 450 psi, inferring boilers are downrated. They are NOT based on valves/piping marked with 250/300 lb ratings. Original proof test per boiler dwg = 450 psi.
- All other CG and Congressional/Historic records indicate MAWP = 225 psi.
- MAWP on COI noted as 250 psi since 2001 with evidence of safety valves set consistent with that pressure. This was a clerical error. Operating pressure is 200 psi with no indication crew has been over-steaming the boilers.

ACTION: Although not required by regs until after 1935, plates will be made, and boilers permanently marked with 225 psi MAWP and stamped with a CG prop stamp. Drum and Superheater Safeties sent ashore and will be set back down consistent with MAWP of 225 psi.

2. Main Steam Line:

- Extra heavy 4.5 inch pipe with mechanical lap seal(not welded) flanged connections, well supported and insulated but not completely accessible throughout its length. Removed insulation in several locations in main dining room, galley and at both ends immediately IWO boilers fwd and throttle valve aft. Opened E/R stop to view piping internally. Found condition satisfactory with no signs of erosion or other anomalies.
- Auxiliary steam system runs on main steam via a 4 inch line that has not been part of the normal regulatory hydro. Per 61.15.-5(b), all piping above 3 inch nominal should be hydroed to 1.25 MAWP.
- Records not clear on when main steam line last hydroed.

ACTION: Main steam line hydroed to 1.25 MAWP along with 4 inch auxiliary steam piping subject to boiler pressure.

3. Boiler Mountings:

- Collars riveted to the drums, drilled and tapped to accept valve studs. Riveted connections in good condition. Some corrosion evident to rivet points on whistle valve collars with original studded connections modified by welding. Condition satisfactory.
- 5 year mountings open inspection overdue. Ten year mountings removed, studs examined inspection due 2009. Studs visually examined and considered satisfactory until required 10 year inspection.
- Boiler drums internally examined and in good structural condition with no corrosion and fully formed rivet heads, but coated with oil and visible

amounts of grease sludge. This is partially a product of the reciprocating technology and ineffective separation of engine lubricants from condensate but may indicate steam heating coils leaks in No. 6 fuel oil tanks.

- Insulation blankets removed from steam drums for good visual of all riveted mounting attachments/lapped seams and found satisfactory.

ACTION: 5 year mountings open inspection completed with valve bonnet studs renewed. Boiler valves MUST be removed for 10 year mountings removed studs examined inspection at next lay-up. Oil/sludge residue removed by hand. Routine annual chemical cleaning not budgeted this year, but indications are oil carry-over has been chronic based on reports aboard dating from 1987 lay-up. While this low temperature/pressure steam plant appears to tolerate this condition, it is not a normal condition and may contribute to premature tube failure from reduced heat transfer and should be looked into further.

4. Sprinkler System:

- Witnessed preliminary performance and flow testing to sprinkler system conducted by VFP Fire Systems. Most testing was satisfactory, but repairs will necessitate a second visit and final testing. System currently connected to shore tie water that bypasses automatic sprinkler pump operation when in lay-up with only crew aboard. While there are good reasons for this arrangement while laid up, the recently changed out crew was not aware of system line-up and required intervention in case of fire.

Conclusions:

Except as noted above, there were no physical conditions found that warranted an expanded inspection. Although the steam plant is an example of manufacturing technology of another time, I found those areas inspected to be over-built and in reasonably good condition. All regulatory tests and inspections were conducted, found satisfactory and are current with respect to the riveted pressure vessels and piping at this time. Further details will follow after underway steaming visit in May 08.

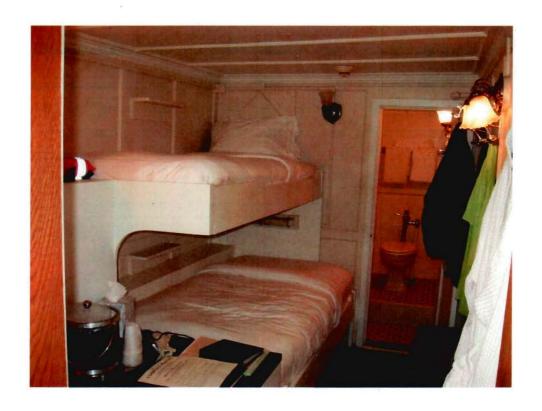
While the representatives present were cooperative and accommodating, the lack of coordination and management of the inspection process as reported in my email of 3/12/08 continues to be the historical status quo, with a reactive rather than proactive focus on the vessel side. Conditions continue to be found during what should be CG witnessed and sign-off inspections and tests that uncover mechanical and maintenance problems requiring outside contractors and associated delays due to required repairs and retesting. CG limited resources and modern day work loads simply cannot accommodate this out of date relationship and redundancy between the regulated and the regulator. Delays to the sailing schedule may be inevitable as the CG may not be able to react to a last minute surge of activity. Beyond that and considering the technology of the vessel, steam experienced managers beyond the existing licensed officers (mostly 2003 Maritime Academy Grads and doing what they can) are not part of the process and budgetary constraints seem evident. This is further evidenced by the condition of the MISSISSIPPI QUEEN moored immediately inboard of the DELTA QUEEN. Accommodation spaces were gutted and renovation stopped over a year ago. Boilers are drained, open and rusting in plain sight in lieu of being properly laid up and attended.

Pending final decisions on the vessel's future, further evaluation, NDT, mods for better inspectability of the main steam plant and resolution of oil carry-over and/or mitigation should start at the next lay-up.

For the MAL/V-Ships: Rome was not built in a day and we look forward to continued process improvement as advertised; For the DELTA QUEEN: It's not pretty, but it will run. Underway inspection pends.

Marc Cruder Traveling Senior Marine Inspector Office of Quality Assurance & Traveling Inspectors

PH: 202-372-1200 Cell: 202-680-3803



Steamer DELTA QUEEN – Typical Passenger Accommodation – 5/2008





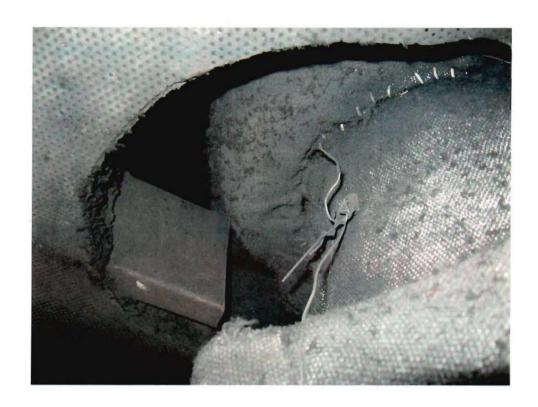
Above - Typical Soot Cloud When Blowing Tubes - 5/2008Below - Resultant soot accumulation - 5/2008





Steamer DELTA QUEEN – Crankcase Vents Pumping Blowby in Generator Enclosures – 5/2008





Steamer DELTA QUEEN
CO2 Protected Generator Enclosures not Fume-tight – 5/2008





Above - Wood Underdeck over Port Generator Box <u>without</u> insulation

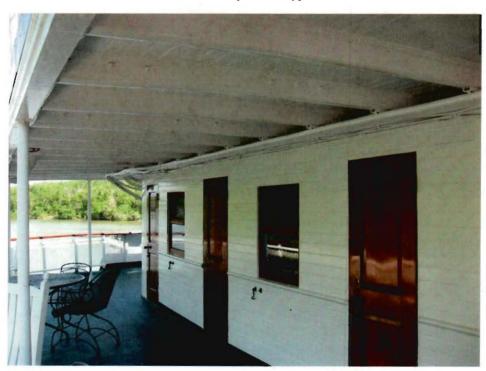
Below - Wood Underdeck over Starboard Generator Box <u>with</u> insulation





Steamer DELTA QUEEN

Condition of Wood Topsides – Typical - 5/2008





Steamer DELTA QUEEN

Oil in Condensate at the Hot Well – 5/2008





1101 Brickell Ave. Suite 1500

Miami, FL 33131 Ph: (305) 371-5573 Fax: (305) 371-8237 www.vships.com

23 June 2008

Captain T. M. Close Chief, Western Rivers Division 500 Poydras Street New Orleans, LA 70130-33310

Dear Captain Close:

This is in response to your letter (16711/DELTA QUEEN) which stated that your office would coordinate issuance of an amended version of a Certificate of Inspection with the operational limitations of no overnight passengers and all overnight accommodations (staterooms) secured.

We propose the following operational conditions for the final voyage of the DELTA QUEEN from 01 November through 10 November and also request your consideration for issuance of a full term Certificate of Inspection with the same operating conditions for the 2009 operational season.

- 1. The DELTA QUEEN certificated to carry a maximum of 174 total passengers. Of these passengers, only 49 will be permitted to remain onboard overnight and the remaining 125 passengers will be carried as excursion passengers and permitted to remain onboard for a period of 12 to 16 hours while underway.
- 2. The 49 overnight passengers will be assigned accommodations limited to the following cabins:
 - a. Cabin Deck Cabins 102 thru 122; and
 - b. Sun Deck Cabins 307, 308, 339 & 340.
- 3. The following cabins will be converted to public accommodation spaces by the removal of all beds and frames. They will be furnished with tables, chairs and made available to the 125 excursion passengers;
 - a. Texas Deck Cabins 211 thru 214, 217 thru 220, and 235 and 236 (10 cabins); and
 - b. Sun Deck Cabins 311 thru 316, 323, 324, 327, and 328 (10 cabins).
- 4. The remaining passenger cabins will be locked restricting passenger access;
 - a. Texas Deck 203 and 204, 207 thru 210, and 225 thru 230; and

- b. Sun Deck Cabins 317 thru 322, 325, 326, and 329 thru 338.
- 5. Historically, four passenger cabins have been used by the master, chief engineer, and two pilots. These cabins (309, 310, 205, and 206) will remain furnished as staterooms for service as crew cabins.
- 6. At this time, we propose no changes to the current manning level of (14) deck, (7) engineering, and (59) other person in crew. We'll further evaluate the number of hotel staff needed to provide our customers a quality product and if warranted, propose a reduction. We are also evaluating whether the current engineering staff level is sufficient to adequately maintain the aging systems and equipment aboard the DELTA QUEEN.

We've based this proposal on our research of 46 CFR 72.05-90 (b) and the definitions of accommodations and overnight accommodations from 46 CFR subchapters H, K and T. This research led us to conclude the DELTA QUEEN as currently constructed and equipped would be permitted to operate with up to 49 overnight passengers.

There is a limited definition of stateroom in 72.05-5 other than to classify the staterooms as a type (5) or (6) depending on the furnishing. The definition of terms for subchapter H (70.10) does not provide a definition of "overnight accommodations or overnight accommodation space". These terms are however defined identically in the definition of terms for Subchapter K (114.400) and Subchapter T (175.400). This definition states:

"...means an accommodation space for use by passengers or by crew members that has one or more berths, including beds or bunks, for passengers or crew members to rest for extended periods. Staterooms, cabins, and berthing areas are normally overnight accommodation spaces. Overnight accommodations do not include spaces that contain only seats, including reclining seats."

Though the definition above does not come from the subchapter applicable to the DELTA QUEEN, we believe it accurately defines an overnight accommodation space aboard any U.S. regulated passenger vessel regardless of the vessel's tonnage. Please note the last sentence of this definition. We interpret the removal of a bed from a stateroom would change the classification of the space to a "public space" and therefore permit passengers to access and use these rooms.

Thank you for your consideration of this request. Should you have any questions or need further information regarding this request, please contact me via email at Kelly.Gordon@vships.com, or my mobile (503) 799-7749.

Sincerely,

Kelly Gordon

Kley E. Re

Superintendent Fleet Compliance, V.Ships Leisure, USA